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Plant-Mediated Synthesis Of Nanoparticles, A Facile And Environment Friendly Approach

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The global human population are increasing with time, the adequate supply of resources has come to be limited. The development of unpolluted technologies for environmental welfare and supplies of energy source for the sustainable development of human being is necessary. Nanotechnology has developed a significant wave on emerging ‘cleaner’ and ‘greener’ technologies with substantial health and environmental revenues. Green nanotechnology is the branch of biotechnology which predicts sustainability over numerous applications. The nanotechnology applications become more useful to solve environmental issues through reducing the global energy consumption for the duration of the synthesis and manufacturing course, the capability to recycle products after practise as well as to develop and use eco-friendly materials, it is the most proficient technique to decrease and eliminate the discharge of toxic pollutants in water, soil and air environments. The nano-manufacturing green synthesis of nanomaterials and the treatment of wastewater with allusion to the principles of green chemistry have been technologically advanced. Currently, nanotechnology shows great promise to resolve the sustainability issues however it is difficult to manage the adverse effects of nanomaterials on the environment and human health. In spite of low cost and high performance of nano-remediation technology, more advanced research is required to understand as well as stop the probable adverse environmental effect i.e. ecosystem-wide effects which are conceivable by green nanotechnology. The study presents the green chemistry principles influencing the life cycle of nano-products from design to disposal and towards environmental welfare.

Keywords: Plant-mediated synthesis, sustainable development, nano-remediation, Nanomaterials.